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COMPARISON BETWEEN RADAR ESTIMATED AND RAIN GAUGE MEASURED PRECIPITATION IN THE MOLDAVIAN PLATEAU

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Abstract

Heavy rainfall events have produced significant damages and casualties in the Moldavian Plateau (Romania) in the last decades. Such phenomena are characterized by large spatial and temporal variations, and the forecast of their occurrence is thus very challenging. This study aims to compare the radar estimations and the rain gauge measurements, in order to improve the quantitative precipitation estimation (QPE) in the area of interest. The research uses data from the WSR-98D (Weather Surveillance Radar – 98 Doppler) S-band Doppler radar located at Bârnova, and from rain gauges within weather stations run by Meteo Romania (Romanian National Meteorological Administration). Considerable spatial distinctions and areas with good radar accuracy for QPE have been emphasized during the investigations. The output validation aimed to predict the rain gauge amounts using the radar information and the resulted adjustment parameters. The validation demonstrates that the Bârnova radar data are reliable within approx. 150 km radius, and the comparison with rain gauge measurements can foster consistently the QPE accuracy.

Key words: comparison, Doppler radar, rain gauge, rainfall

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